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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/671,980   | 09/26/2003  | Byeong Soo Bae       | ASIAP119            | 8857             |
| 25920  | 7590        | 08/01/2005           | EXAMINER            |                  |
| MARTINE PENILLA & GENCARELLA, LLP<br>710 LAKEWAY DRIVE<br>SUITE 200<br>SUNNYVALE, CA 94085 |             |                      | MARKHAM, WESLEY D   |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 1762                |                  |

DATE MAILED: 08/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action  
Before the Filing of an Appeal Brief**

Application No.

10/671,980

Applicant(s)

BAE ET AL.

Examiner

Wesley D. Markham

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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 21 July 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 4 months from the mailing date of the final rejection.  
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☐ The reply was filed after the date of filing a Notice of Appeal, but prior to the date of filing an appeal brief. The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ They raise the issue of new matter (see NOTE below);  
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
The status of the claim(s) is (or will be) as follows:  
Claim(s) allowed: \_\_\_\_\_.  
Claim(s) objected to: \_\_\_\_\_.  
Claim(s) rejected: 1-10.  
Claim(s) withdrawn from consideration: \_\_\_\_\_.

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attached Advisory action.  
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). \_\_\_\_\_.  
13. ☐ Other: \_\_\_\_\_.

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### **ADVISORY ACTION**

Acknowledgement is made of the request for reconsideration filed by the applicant on 7/21/2005 (certificate of mailing dated 7/18/2005). **Claims 1 – 10** remain pending in U.S. Application Serial No. 10/671,980, and an advisory action follows.

### ***Response to Arguments***

1. Applicant's arguments filed on 7/21/2005 have been fully considered but they are not persuasive.
2. Regarding the 35 U.S.C. 103(a) rejections based, in part, on Chandross et al., the applicant generally argues that the examiner's application of the Chandross et al. reference is improper because it fails to reflect the material features of organic-inorganic hybrid materials. The applicant states that it is impossible to explain fully the phenomenon of increasing refractive indices by photopolymerization reaction between photochemical monomers and the organic part of organic-inorganic hybrid materials. According to experiments carried out by the inventors, other reactions (i.e., reactions other than photolocking and reactions not found in organic polymers) take place when hybrid materials are irradiated with light, and these reactions cannot be expected when irradiating light onto pure organic polymers as shown in Chandross et al. To support this position, the applicant cites four references concerning the variation of refractive index caused by irradiation onto hybrid materials purportedly showing that the refractive index can be highly increased by

light irradiation onto hybrid materials, a result that cannot be explained solely by photolocking as disclosed by Chandross et al.

3. In response, this argument is not convincing. To begin, the examiner notes that obviousness does not require absolute predictability – only a reasonable expectation of success is required. In this case, the inorganic-organic hybrid matrix waveguide layer of Kuramoto et al. comprises a polymeric component such as polymethylmethacrylate (PMMA) (paragraphs [0019] and [0021]). Chandross et al. teaches manufacturing an optical waveguide device by using a “photolocking” technique (Col.2, lines 35 – 40) in which a waveguide material based on a polymer such as PMMA (i.e., a polymer as taught by Kuramoto et al. to be a component of the waveguide layer) is uniformly doped with photosensitive photochemical monomers, deposited on a substrate, dried by evaporating the solvent, selectively exposed to a beam having a predetermined wavelength in order to photolock the monomers into the waveguide material layer, and heated to remove the unexposed monomers (Figures 1 and 2A – 2D; Col.1, lines 14 – 29, Col.2, lines 30 – 71, and Cols.3 – 6). Based on these teachings, one of ordinary skill in the art would have had a reasonable expectation of success when using the photo-locking technique of Chandross et al. with an inorganic-organic hybrid matrix such as that of Kuramoto et al. because the photo-locking of the monomers would be expected to occur due to the interaction of the monomers with the organic (PMMA) component of the hybrid matrix, regardless of whether other, inorganic components are present in the matrix as well. In other words, since an organic (PMMA) matrix supports a photo-locking

technique, it is reasonable to infer that an organic matrix (PMMA) in combination with other inorganic components will also support a photo-locking technique. The applicant's position that other reactions (not anticipated by Chandross et al.) also occur when an organic-inorganic hybrid matrix is irradiated by light would not have deterred one of ordinary skill in the art from using the photo-locking technique of Chandross et al. on an organic-inorganic hybrid matrix because, although other reactions may occur, the photo-locking of the monomers would also be expected to occur due to the interaction of the monomers with the organic portion of the matrix. To further support the examiner's position, please note that Bae et al.

("Photochemical self-developing of doped sol-gel hybrid glass waveguides", June 2001), Bae et al. ("Direct laser writing of self-developed waveguides in benzyldimethylketal-doped sol-gel hybrid glass", November 2001), Park et al.

("Photoinduced condensation of sol-gel hybrid glass films doped with benzyldimethylketal", July 2001), and/or Jung et al. ("Fabrication of Channel Waveguides by Photochemical Self-Developing in Doped Sol-Gel Hybrid Glass", 2003) all teach that a photo-locking technique, as taught by Chandross et al., can be applied to the production of hybrid organic-inorganic material waveguides. A number of these references were published well over a year before the filing date of the instant application and are therefore relevant to show the knowledge generally available to one of ordinary skill in the art at the time of the applicant's invention.

4. The applicant also appears to argue that the applicant's method provides "unexpected results" (i.e., that the refractive index of the organic-inorganic hybrid

matrix is highly increased by light irradiation onto hybrid materials, a result that cannot be explained solely by photolocking). To support these results, the applicant cites four references. This argument is not convincing for the following reasons. First, none of the applicant's claims require increasing the refractive index of the hybrid matrix by the beam exposure. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). As such, the results relied upon by the applicant do not have a nexus with the claimed invention. Second, the examiner cannot evaluate whether or not the results are "unexpected" because there is no comparison on the record of the refractive index change due to photo-locking in a purely organic matrix (as taught by Chandross et al.) versus the refractive index change in the claimed hybrid organic-inorganic matrix. Please note that Chandross et al. does teach that the photo-locking technique increases the refractive index of the material, and Bae et al. ("Photochemical self-developing of doped sol-gel hybrid glass waveguides", June 2001), Bae et al. ("Direct laser writing of self-developed waveguides in benzyldimethylketal-doped sol-gel hybrid glass", November 2001), Park et al. ("Photoinduced condensation of sol-gel hybrid glass films doped with benzyldimethylketal", July 2001), and Jung et al. ("Fabrication of Channel Waveguides by Photochemical Self-Developing in Doped Sol-Gel Hybrid Glass", 2003) also teach that a refractive index increase is expected, not unexpected, when such a photo-locking technique is applied to hybrid waveguide materials. Third, the results cited by the applicant in the four articles are limited to

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very specific conditions (i.e., specific organically modified (germanium doped) glasses produced from specific monomers and containing specific photosensitive photochemical monomers, the glass being exposed to specific irradiation conditions) while the applicant's claims are open to any inorganic-organic hybrid matrix, any photosensitive photochemical monomer, and any irradiation conditions. As such, the results provided by the applicant are not commensurate in scope with the claimed invention. Please note that evidence relied upon to rebut a *prima facie* case of obviousness must be reasonably commensurate in scope with the claimed invention (*In re Kulling*, 897 F.2d 1147, 1149, 14 USPQ2d 1056, 1058 (Fed. Cir. 1990); *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 777 (Fed. Cir. 1983)).

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D. Markham whose telephone number is (571) 272-1422. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
WDM

Wesley D Markham  
Examiner  
Art Unit 1762

  
TIMOTHY MEEKS  
SUPERVISORY PATENT EXAMINER